

No. 636,567.

Patented Nov. 7, 1899.

P. SCHREINER.
CAR COUPLING.

(Application filed Apr. 21, 1899.)

(No Model.)

Fig. I.

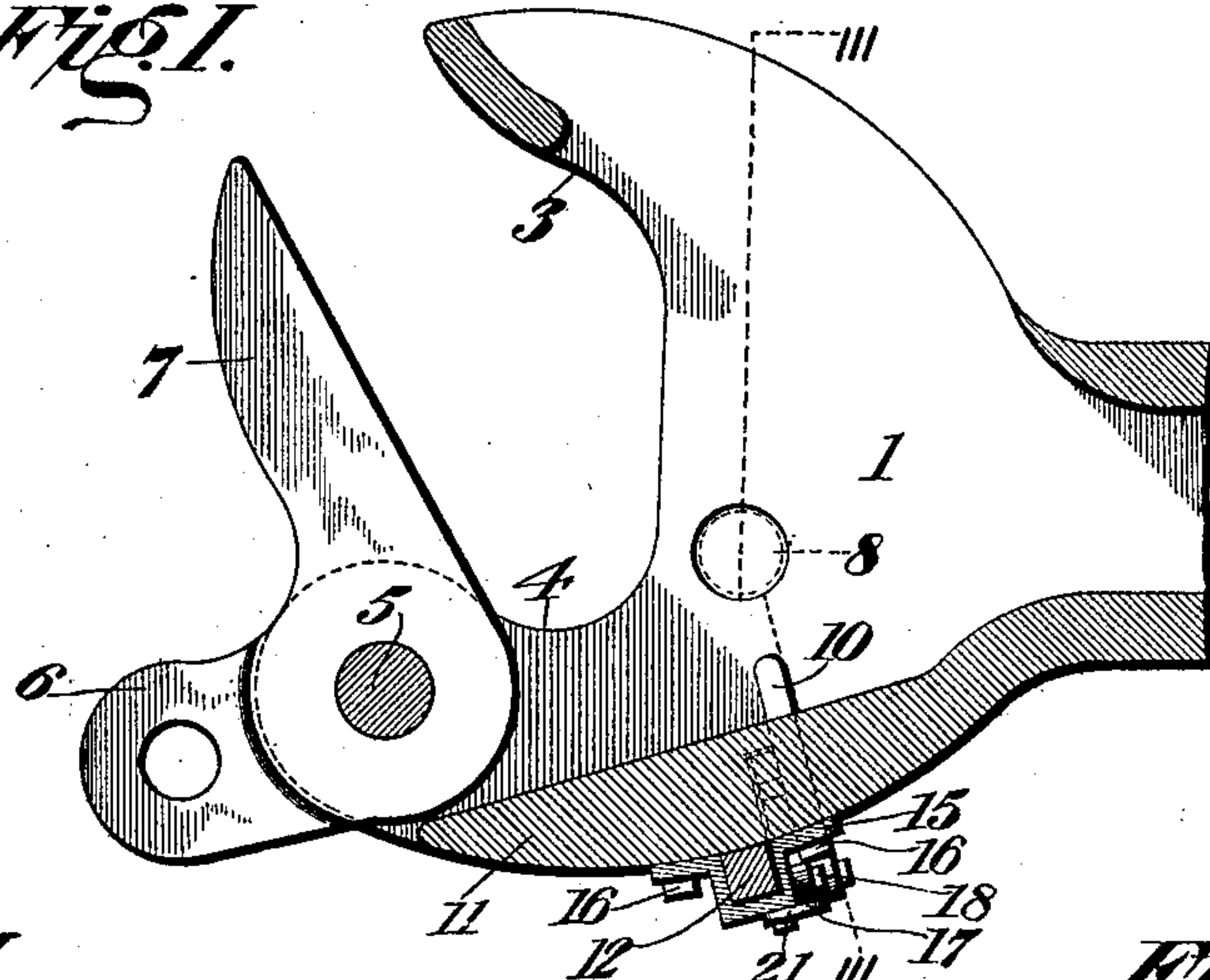


Fig. II.

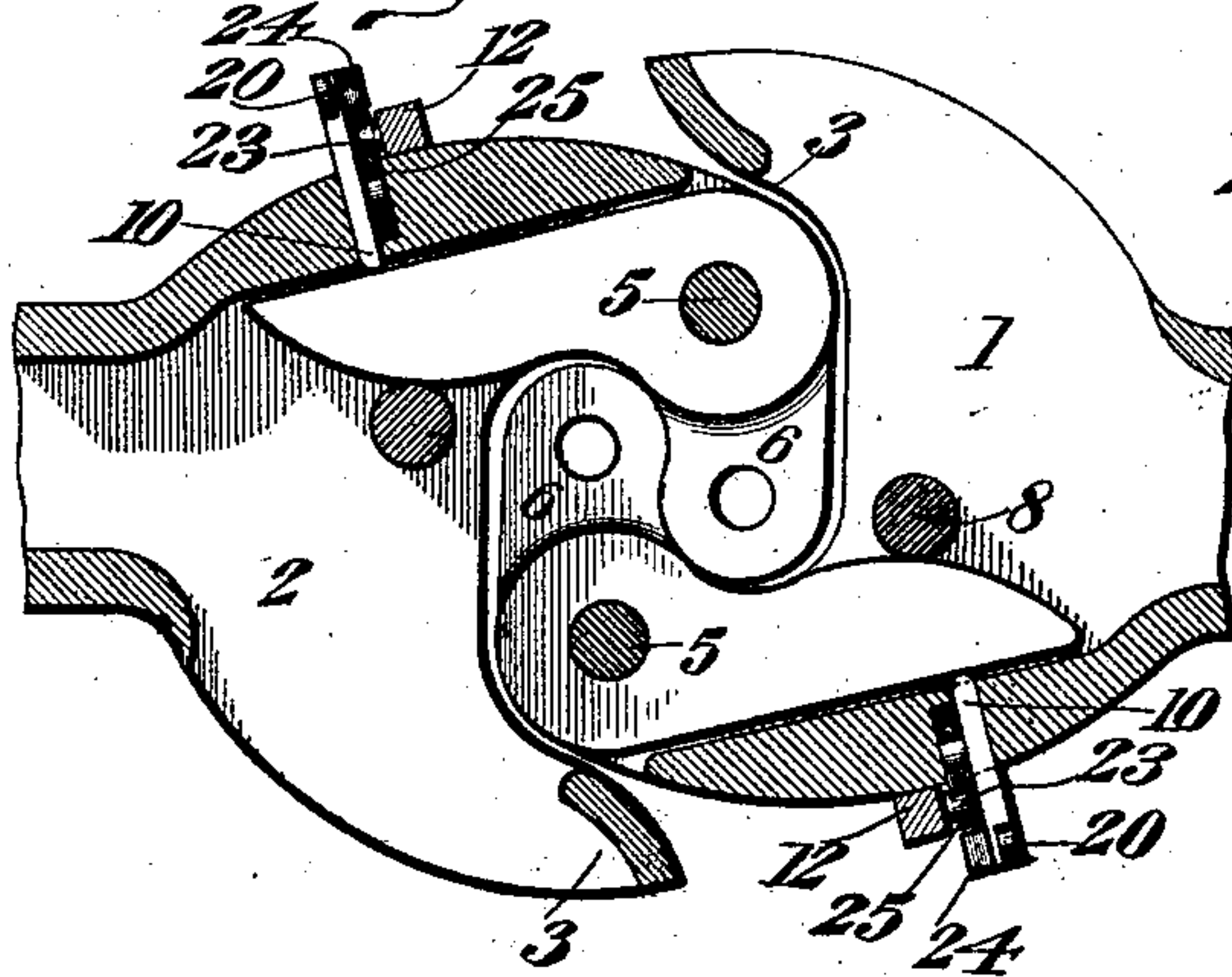


Fig. III.

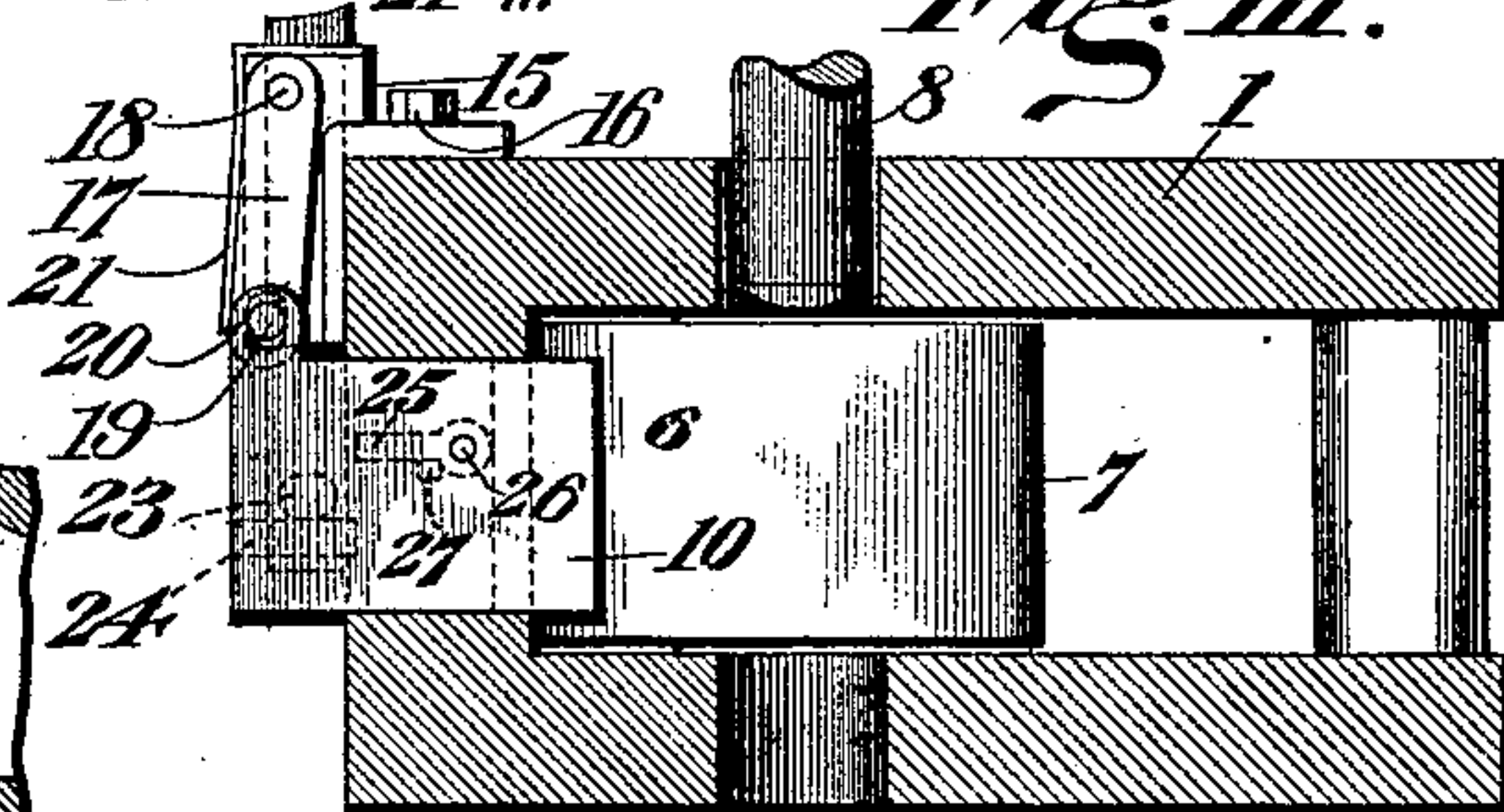
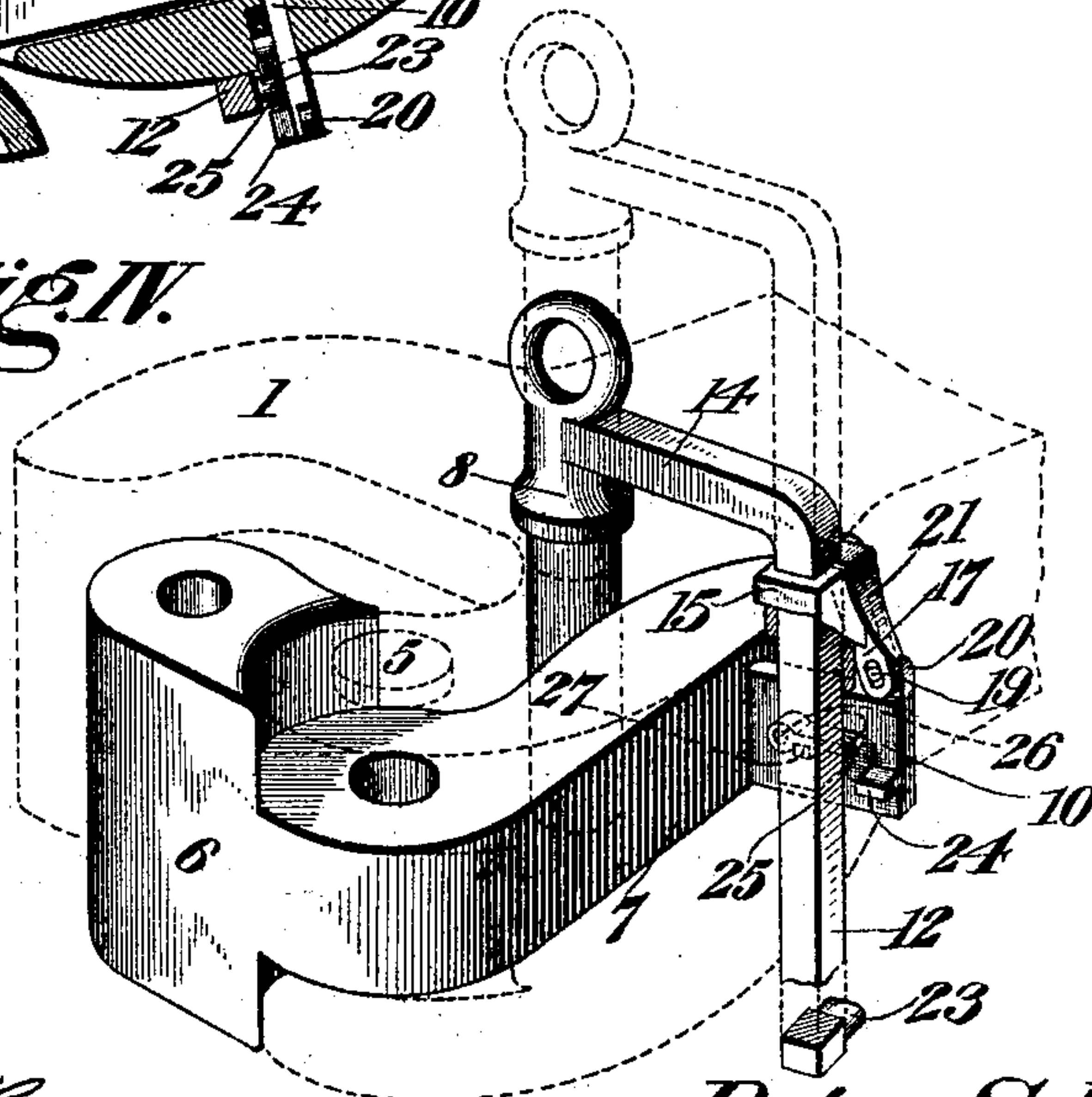


Fig. IV.



Witnesses

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 636,567, dated November 7, 1899.

Application filed April 21, 1899. Serial No. 713,935. (No model.)

To all whom it may concern:

Be it known that I, PETER SCHREINER, of Madison, in the county of Jefferson, State of Indiana, have invented certain new and useful Improvements in Car-Couplers, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce improvements in car-couplers in which a movable engaging member on the draw-head is adapted to be confined or released for coupling or uncoupling through the interposition in the path of movement of a part upon or connected with the engaging member of a pin or retaining member, whereby the pin or retaining member may be set and automatically dropped into the coupling position through the concussion of a pair of coöperative draw-heads or through the movement of the engaging member.

My invention is specially, but not exclusively, applicable to that type of coupler known as the "Master Car-Builders'," in which form of embodiment of my invention pin-dropping mechanism is preferably actuated by the movement of the tailpiece of the knuckle, or that part of the knuckle that is adapted to be engaged and held for coupling by the coupling-pin.

In the accompanying drawings, Figure I is a horizontal sectional view of a portion of one coupling member of a preferred type of coupler equipped with my invention and illustrating the knuckle in elevation and open, as subsequent to the uncoupling operation or preparatory to the coupling operation. Fig. II is a view similar to Fig. I, illustrating a pair of coupling members coupled together and showing the position of such parts of the pin-sustaining mechanism as are included in the view in the relative positions which they occupy when the pin has been lifted and set preparatory to the uncoupling operation. Fig. III is a section on the line III III of Fig. I. Fig IV is a perspective view of a portion of a coupling member, showing in full lines the pin dropped into the coupling position, the coupling member being illustrated in dotted lines, in which also the pin is illustrated in the position for uncoupling, and a

portion of the pin-guide and of the pin-guide housing being broken away in order to more clearly illustrate the structure and relations of the several parts.

Referring to the numerals on the drawings, 1 indicates one coupling member, and 2 its counterpart. The several elements of the parts 1 and 2 being identical, except as respects their correlative location, are therefore designated by one set of numerals. The coupling member preferably consists, essentially, of a draw-head terminating at its forward end in jaws 3 and 4. Within a horizontally-disposed recess in the jaw 4, as upon a pivot-pin 5, is movably mounted an engaging member, preferably a knuckle 6. The knuckle preferably terminates in a tailpiece 7, which preferably forms, with the knuckle, a bell-crank lever mounted so as to oscillate upon the pin 5. The office of the tailpiece is twofold. One function is to receive the impact from the engaging member or other coupling member as the parts come together in the coupling operation, and thereby swing the engaging member 6, to which it is attached, into the coupling position shown in Fig. II. The other function is to engage with the coupling-pin 8 and secure the coupling members together after they are coupled, as illustrated in the figure last referred to.

The parts above described, as has been already suggested, constitute a preferred form of coupler to which my invention is applied. In applying my invention to that preferred form of coupler I prefer to impose an additional function upon the tailpiece 7—namely, that of actuating the pin-sustaining and pin-dropping mechanism. The pin-sustaining and pin-dropping mechanism consists, essentially, of mechanism adapted to sustain the pin after it is raised preparatory to the uncoupling operation and to hold it in that position after the uncoupling operation takes place until a recoupling operation takes place, and then to automatically drop the pin, and thereby couple the members together. From the description last given it will be perceived that the couplers require no manipulation of an attendant, except when the uncoupling operation is provided for, and that attention, as will hereinafter more fully appear, simply de-

mands the mere lifting of the pin to a required height.

The preferred form of pin sustaining and dropping mechanism as applied to the preferred type of coupler specified comprehends a sliding bar 10, working transversely through an aperture in the side wall 11 of the coupling member, normally projecting into the path of movement of the tailpiece 7, and provided with means for sustaining and releasing the guide-arm 12, connected with the pin 8, as by a cross-bar 14, formed with or secured to the pin. The guide-arm 12 preferably works within a housing 15, that is secured to the top or side of the coupling member, as by screws 16. The sliding bar 10, although in practice it may be of comparatively small dimensions, may require to project a greater or less distance from the side of the coupling member, according to its particular location. For that reason I prefer to employ a link 17, pivoted, as indicated at 18, to the housing 15, and, as indicated at 19, to a lug 20 upon the bar 10.

In order to provide for the horizontal movement of the bar 10, suitable provision must be made, that shown being a loose pivotal connection 19. The bar 10 requires to be normally urged toward engagement with the tailpiece 7, the purpose of which is fully accomplished when the tailpiece is in position illustrated in Fig. II. In order to secure said operation of the bar 10, any mechanism may be employed and the same may be applied in any preferred manner. A convenient form of embodiment of such mechanism consists in a spring 21, secured at one end to the housing 15 and bearing at its free end upon the link 17.

The function of the bar 10 is to afford means for sustaining the pin in the elevated position under certain conditions and by its movement occasioned by impact against it of the tailpiece 7, which, as has been specified, takes place when the knuckles are in the positions illustrated in Fig. II, but ready to be coupled to drop the pin and perfect the coupling operation. For this purpose I prefer to provide upon the side of the guide-arm 12 next to the side of the bar 10 a lug 23, which is preferably elliptical in cross-section. Upon the opposing face of the bar 10 I provide a sustaining member, and preferably two sustaining members, consisting of a lug 24 and a movable dog 25, preferably hinged, as indicated at 26, to the bar and limited in its downward movement toward the lug 24 to a horizontal position and fixed by a stop-pin 27, projecting from the face of the bar 10. The lug 24 and the dog 25 are preferably in different horizontal planes in order to admit between them the thickness of the lug 23.

In order to fully comprehend the relations of the parts last specified, it will be well to consider that the pin 8 must be lifted prepara-

tory to the uncoupling operation while the parts are coupled together, as shown in Fig. II. Attention, however, has been called to the fact that in that position the bars 10 of the coupling member 1 and its counterpart 2 are driven outwardly against the tension of their springs 21. That is also the position of the coupling member illustrated in Fig. IV. If when the parts are in this position the coupling-pin 8 be lifted to a position in which it may be sustained by intervention of the bar 10 and its members, provision must be made for permitting the passing of the lug 23 to a position above the supporting member which is to support it. For that reason a movable dog 25 is employed and is located so that when the bar 10 is in the position in which the pin 8 requires to be elevated for the uncoupling operation its free end lies in the path of vertical movement of the lug 23, which, engaging it, lifts it until the lug 23 clears it, whereupon it drops again into the horizontal position supported by stop-pin 27. Consequently when the pin is released it is sustained in the elevated position by engagement of the lug 23 with the dog 25. The relative lengths of the guide-arm 12 and of the pin 8 are such that when the pin is sustained in the elevated position described immediately above the knuckle 6, with its tailpiece 7, is free to swing open, and does so upon the withdrawal of one coupling member from the other. When the tailpiece 7 swings away from engagement with the bar 10, that bar, impelled by its spring 21, travels to the position shown in Fig. I. In doing so the lug 23 is shifted from the dog 25 to the lug 24. If now the tailpiece 7 be swung back to the position shown in Fig. II or Fig. IV, it will again engage the bar 10 and force it back against the tension of the spring 21. The lug 23, slipping easily between the lug 24 and the dog 25, is released, and the pin is allowed to drop into its coupling position. After the coupling operation described, which terminates when the dropping of the pin 8 has taken place, the parts are ready for a repetition of the operation, as described.

Any preferred means for lifting the pin for the uncoupling operation, when required, may be employed. I prefer to employ the ordinary lever, which may be operated by an attendant from the side of the car; but as such means for lifting the pin is well known in the art it is not herein illustrated.

What I claim is—

1. In a car-coupler, the combination with a coupling member provided with an oscillatory knuckle and tailpiece, and a retaining-pin, of a bar movable on the coupling member and a tailpiece, a guide-arm connected with the pin and movable vertically in fixed relations to the bar, a movable dog, and a lug upon the bar, and a lug upon the arm cooperating with said dog and lug, substantially as and for the purpose specified.

2. In a car-coupler, the combination with a
coupling member provided with an oscillatory
knuckle and tailpiece, and a retaining-pin,
of a spring-actuated bar movable on the coup-
5 ling member and a tailpiece, a guide-arm con-
nected with the pin and movable vertically in
fixed relations to the bar, a movable dog, and
a lug upon the bar, and a lug upon the arm

coöperating with said dog and lug, substan-
tially as and for the purpose specified. 10

In testimony of all which I have hereunto
subscribed my name.

PETER SCHREINER.

Witnesses:

ANTON SCHREINER,
FRANK SCHREINER.